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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



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A SCIENCE SERVICE PUBLICATION

GENERAL SCIENCE

Student Deferment Cut

One of legacies of Truman's administration to President Eisenhower is the manpower problem: Can the U. S. maintain an armed force of 3,700,000 men with only a two-year draft?

► THE NEW assistant secretary of defense for manpower, John A. Hannah, will have to decide almost immediately whether to draft fathers and cut down on college student deferments.

The Truman administration held off making a decision on this, preferring to leave it to President Eisenhower's administration.

Dr. Hannah, president of Michigan State College, replaces Anna Rosenberg as head of the Defense Department manpower policies.

Maj. Gen. Lewis B. Hershey, head of Selective Service, has said that the mathematics of the situation will make it necessary to draft fathers almost immediately. In that case, he says, college student deferments should be cut too. The Engineering Manpower Commission recently pointed out that drafting fathers, cutting down on college and essential worker deferments would only delay the decision on a much more fundamental question.

This is whether we can maintain a 3,700,000-man armed force with only a two-year draft if only a million men are turning 18 each year.

The engineers declared that, once the pool of 19- to 25-year-olds, including fathers, is exhausted, it will not be mathematically possible to keep our armed forces at 3,700,000 unless the draft period is increased.

Even the most extreme proponents of college deferment admit that this must be cut somewhat if fathers are drafted. Right now 184,000 students are in the deferred status. How much this will be cut no one knows—four different percentages are being discussed. Hit hardest in the cut will probably be smaller graduate schools whose standards are not too high. They may lose most of their students.

Dr. Hannah is known to be sympathetic to the college deferment plan and also to the maintenance of a strong ROTC. In 1948-49, he was president of the Association of Land Grant Colleges which stands for across-the-board student deferment, rather than deferment by the kind of courses the students pursue. However, Dr. Hannah believes that in most cases, deferment should end with the end of the college career. No one should be permanently exempted from military service, is his thought.

He is greatly concerned about the impact of Defense Department manpower policies on the young people of the nation. He does not like policies which constantly shift and veer. The young people, he believes, should at least know what is in store for them, even though their being drafted to help defend the nation might make their fate seem tough.

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GENERAL SCIENCE

More Funds for Bombs

► PRODUCTION OF atomic bombs will rise although total appropriation for the Atomic Energy Commission will be cut in about half, if Congress follows ex-President Truman's proposed budget.

AEC expenditures hit a peak of \$4,200,000,000 in the fiscal year 1953, ending six months from now. Mr. Truman suggested an appropriation next year of \$1,996,000,000. Much of the four billions was appropriated for new plant construction.

Operating costs for weapons and source and fissionable materials which go into atomic bombs were about \$606,000,000 in fiscal year 1953. They would be \$750,000,000 in fiscal 1954.

However, funds for plant and equipment in those categories, almost \$3,000,000,000 in fiscal 1953, are scheduled for only about \$740,000,000 in 1954.

Increases in total operating funds for the next fiscal year would "provide for increases in our reserve of atomic weapons and for the development and testing of improved

weapons," Mr. Truman told Congress in his budget message.

The budget indicated that there might be weapons tests at both Nevada and Eniwetok during fiscal 1954.

There would also be some expansion of the program to build atomic-powered submarines and airplanes, according to the former President.

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VITAL STATISTICS

Bedroom and Stairs Biggest Home Killers

► THE BEDROOM and the stairs accounted for nearly one-half of all the fatal injuries sustained in the home during 1951, statisticians of the Metropolitan Life Insurance Company in New York have reported.

Among men, the stairs and steps were first as accident scenes, with more than one-fourth of all the deaths, with the bedroom

second. Among women, the order was reversed, most fatal injuries to them occurring in the bedroom.

Fully half the fatal injuries in the bedroom came from conflagrations or burns by other means. Not a few came from smoking in bed, although many spread from kitchen or living room.

Many bedroom accidents came from falls. Slipping on a wet floor, tripping on nightgown, colliding with chair and faintness are among the causes given for these. Falling out of a window "was an important item among males, while falls out of bed were most frequently mentioned among females," the statisticians report.

Their findings are based on death claims of industrial policyholders of the company, but their experience is said to give a good picture of the situation in the United States.

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TECHNOLOGY

Capture Fruit Flavors Lost Making Preserves

► FLAVORS USUALLY lost in making preserves can be captured and returned to the preserves or added to other fruit products, using a new process developed by the U. S. Department of Agriculture.

The flavor recovery method, perfected at the Eastern Regional Research Laboratory, Philadelphia, is a modification of the process now used for capturing the volatile flavors from fruit juices. It involves changing the usual condenser arrangement on cooking kettles. The cooling water is maintained at a low temperature, thus condensing practically all of the desired aroma, which can then be concentrated to an essence.

The concentrated flavor is suitable for adding to beverages, fountain syrups, ice cream, confectionery and other desserts as well as preserves.

The process was developed by N. C. Aceto, R. K. Eskew, G. W. M. Phillips, C. S. Redfield and J. J. Skalamera.

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INVENTION

Go Up Hill With Power-Driven Ski

► YOUR SKIS will carry you up hill if they are made like the invention of Stanley Van Voorhees, West Los Angeles, Calif. Little tractor units are attached to the upper sides of the skis. Power to drive the belts is supplied either by a motor carried on the sportsman's back or by two smaller motors also attached to the skis.

When the skier wants to go up hill, he turns the skis over, turns on the motor and off he goes. When he wants to ski back down the hill, he reverses the position of the skis and starts off.

Mr. Van Voorhees received patent number 2,625,229.

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"HEARS" SPOKEN WORDS—"Audrey," the electronic robot that "understands" and reacts to precisely enunciated numbers from one to ten by flashing an appropriate light, is shown here being put through paces by K. H. Davis, one of its designers at the Bell Telephone Laboratories.

ELECTRONICS

Telephonic Robot Device

Automatic digit recognizer "listens" to clearly enunciated digits, then matches the sound pattern electronically to standard referents stored in its "memory."

► AN ELECTRONIC device that can "understand" and recognize spoken numbers has been built at Bell Telephone Laboratories, New York.

The robot is named "Audrey," a contraction of "automatic digit recognizer." It has a special circuit to determine automatically which of ten numbers, from "1" through "0" has been spoken into an ordinary telephone, and responds by flashing an appropriate light.

The response mechanism, however, Bell engineers say, could equally well control other operations, such as dialing. Thus Audrey might be the forerunner of in-the-future devices that would allow putting phone calls through automatically, simply by speaking the desired phone number into the mouthpiece instead of dialing it.

It is hoped to extend the robot's vocabulary to include additional sounds, and words rather than numbers. The nerve system of the device uses the same sort of equipment as found in a telephone central office, particularly relays, the heart of the modern dial system.

It operates on the principle of memory and matching, first listening to the human voice, then sorting the speech sounds into electrical categories that conform to standard reference patterns already drawn electronically and stored in a memory cell.

When the device is adjusted for best performance with a particular speaker, it operates with remarkable accuracy, but it is not yet in a state to answer to a variety of voices reliably unless it is readjusted for each one.

Drs. K. H. Davis, R. Biddulph and S. Balashek of the Bell Laboratories point out, in describing the device in the *Journal of the Acoustical Society of America* (Nov., 1952), that voice-operated devices have been used for many years in transoceanic telephony. Some of these have proved useful in the suppression of electrical "echoes" that sometimes appear in very long telephone connections.

Until now, however, the devices have not had to distinguish between different words.

For many years scientists have been able to translate speech into visible form with

machines such as the sound spectrograph. From studies of the resultant patterns, the individual characteristics of speech components have been determined. These characteristics are relatively consistent, and fall into similar groups in their outlines.

From these studies has come the key which enables the recognizer to match essential elements in the spoken sound against a set of ten standards, then decide the best match.

The experimental equipment fits into a bay roughly the dimensions of a large console TV-radio-phonograph combination.

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ICHTHYOLOGY

50 New Species of Fish Found in California Gulf

► PROVING THE old saying "there are still other fish in the sea," more than 50 new species have been found in the Gulf of California, ranging from tiny creatures no larger than a fingernail to large edible species of a bright crimson hue.

They were collected recently by Dr. Boyd Walker and Murray Newman, University of California at Los Angeles ichthyologists, who are helping to make a long-range classification of fauna found in southern California and Baja California waters. So far 585 species of fish have been identified in this region.

Among the edible fish found in the Gulf of California are several species that have long been sold in Mexican markets without ever having been officially identified by fish experts. Included in the collection are several rare species of sting rays, some of which grow to lengths of seven feet or more.

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CHEMISTRY

2,000-Year-Old Iron Hints Tannates Stop Rust

► IRON RELICS 2,000 years old may yield to 20th Century scientists the secret of keeping underground water and gas pipes from corroding.

Discovered at Hungate, York, England, the iron articles ranged from hob nails to Roman knives and were buried in soil ordinarily most destructive to iron. Laboratory soil tests, however, showed tannates of a nearby medieval "shoe factory" had got into the ground and apparently had stopped the destructive action of sulfate-reducing bacteria on the iron objects.

Later work revealed that tannic acid in concentrations as weak as one one-hundredth of a percent will stop the bacteria from corroding iron.

Scientists working for the Department of Scientific and Industrial Research in London speculate this eventually will lead to a method of protecting water and gas pipes from corrosion.

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ENTOMOLOGY

Molasses in Insecticide

► **HOUSEFLIES SWARM** to a new-type insecticide as if it were molasses. And for a good reason: it is molasses, but with a generous helping of TEPP, sodium fluoroacetate, sodium arsenate or sodium arsenite added.

These chemical baits, using blackstrap molasses or brewers' malt along with very potent poisons, are being developed to control DDT-resistant flies, J. B. Gahan of the Bureau of Entomology and Plant Quarantine told the American Association of Economic Entomologists meeting in Philadelphia.

Houseflies that infected dairies in the Orlando, Fla., region had become so resistant to the DDT family of insecticides, which are chlorinated hydrocarbons, that their control was almost impossible. To fight the flies, U. S. Department of Agricul-

ture entomologists began experiments with the chemical baits.

Mixtures of blackstrap molasses or brewers' malt with highly toxic poisons that were not of the DDT group were placed in open pans on dairy floors, with wire covers to keep stock from eating the poison.

In the first 24 hours, the pan baits gave 49% to 88% control over the flies. Three weeks later, more than 90% of the flies had been killed in all the experimental dairies.

Although chemical baits appear highly promising in controlling houseflies, Mr. Gahan warned that they are not ready for general use yet. All the toxic ingredients used are highly poisonous to man and animals, he said, and further work must be done to make them safer before they can be widely applied.

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TECHNOLOGY

Coat Metals in Vacuum

► **THE PROCESS** of plating metals and plastics by vacuum metallizing is finding increasing favor in commercial circles as manufacturers seek to cut consumption of critical metals.

The National Research Corporation, Cambridge, Mass., reports that although the vacuum technique is comparatively new, it is "catching on" quickly because of the economies it offers.

Brilliant metallic finishes can be deposited on objects through vacuum techniques, yet little coating metal is required. With many metals now needed for defense equipment, such metal savings are highly attractive to industrialists.

Objects to be coated are put in a chamber that can be evacuated. Coating metal is put on filaments arranged in the chamber.

The chamber is evacuated and the filaments are heated electrically to incandescence.

The hot coating metal boils off in vapor form and condenses on the article to be coated, producing a bright finish of microscopic thickness. In some cases, the gleaming finishes are so bright they do not even have to be buffed.

Aluminum, silver, gold, copper, zinc, chromium, cobalt, nickel, selenium and many other metals and metallic compounds serve satisfactorily as coating materials.

The process is especially good in the making of automotive and consumer appliance hardware, handtools, light fixtures, reflectors, decorative medallions, jewelry and toys.

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ARCHAEOLOGY

Rescue FFV Relics

► **BEFORE THE** waters of the recently completed John H. Kerr Reservoir flooded over the land along the Roanoke River in southern Virginia, scientists were able to rescue evidences of the very "First Families of Virginia" who lived and hunted there some 7,000 years ago.

The finds were the curiously shaped fluted points that archaeologists know as the eastern type Folsom. They were hurled at game by a throwing stick, or atlatl, which was longer-shafted than an arrow but not so long as a spear. The points are very similar to those found in the West in close association with extinct animals.

These first Virginians probably came in an early migration down the eastern side

of the Rockies and then across country to the Roanoke. The new migrants probably followed in the pathways of migrating buffalo which provided their food.

Unfortunately, no camp sites of these people have been found that could be dated with the accurate carbon-dating method. Neither have any of the bones of these people been located.

Other weapons were found that were left by people who occupied the area in later times. A small diamond-shaped point known as the Sandia point is believed to be about 3,500 to 5,000 years old. And a long willow-leaf-shaped point, the Manzano point, was probably used to shoot down game some 2,000 years ago.

The work of digging out these ancient remains was done by Carl F. Miller, of the Smithsonian Institution, which is cooperating with the Corps of Engineers and the National Park Service in salvaging archaeological remains in areas to be flooded.

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Generally speaking, an automobile engine uses 9,000 cubic feet of air to one cubic foot of gasoline.

Additional floor space equal to a one-story building, 52 feet wide, extending from New York to San Francisco is needed to house the nation's public elementary and secondary school population adequately.

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PHYSICS

Paralyze Big Centers

Since the U. S. has 33 metropolitan areas, each with more than 500,000 population, 35 to 40 H-bombs could destroy these centers as well as our atomic installations.

► WITH ABOUT 35 to 40 H-bombs, Russia could paralyze our major industrial and population centers and our atomic energy installations.

There are 33 metropolitan areas with populations of more than 500,000. Each could be virtually destroyed with one H-bomb. Another five H-bombs could take care of Oak Ridge, Tenn., Los Alamos, N. Mex., Hanford, Wash., Portsmouth, Ohio, and the big new Savannah River, Ga., H-bomb plant.

Other places in the United States are only A-bomb size or smaller. An H-bomb, packing the equal of one million tons of TNT, would be too big for them.

The Soviet Union has two population centers worth hitting with an H-bomb, Moscow and Leningrad, plus five to ten atomic installations and special weapons centers.

Ten Russian H-bombs on the first ten major population centers could kill or injure almost 40,000,000 people.

Our government will know when the Russians explode their first H-bomb. Materials from that bomb, microscopic fragments, spewed high into the atmosphere, will travel westward over Siberia, China and the Pacific ocean. They can be picked up and analyzed by delicate instruments. It is known that our government keeps a constant watch for such particles. Thus we knew when the Soviets exploded their first A-bomb back in 1949.

An indication that the Soviets might not yet have exploded their first H-bomb might be in the small sum ex-President Truman asked for the Federal Civil Defense Admin-

istration in next year's budget. Only \$150,000,000 is earmarked in the new budget for civil defense. Meantime, it cannot be said that any large American cities are prepared to take and mitigate A-bomb attacks, let alone the H-bombs.

Whether to try to revitalize civil defense will be another of the many decisions facing President Eisenhower.

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TECHNOLOGY

New Rubber Still Bends At Frigid Temperatures

► A NEW easy-to-handle silicone rubber that bends without cracking even at 120 degrees below zero Fahrenheit has been developed by the General Electric Company to meet new design requirements of the fast-growing aircraft industry.

Called SE-550, the rubber can be made into gaskets, fuselage equipment seals and wire insulation for America's super-modern planes that now streak through the thin

upper atmosphere where temperatures fall as low as minus 67 degrees. The rubber also can be used in military ground equipment designed for the frigid Arctic.

The rubber actually does not become brittle until temperatures fall well below minus 120 degrees Fahrenheit. Yet at plus 500 degrees Fahrenheit, the substance still resists heat well.

The new compound can be milled and extruded easily and resists tearing when pulled from hot molds.

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TECHNOLOGY

Protect With Single Coat Of Fast-Drying Paint

► A FAST-DRYING paint used to cover the bottoms of wooden Coast Guard boats is saving the government \$50,000 a year, the Coast Guard reports.

Developed by the wartime Office of Scientific Development and Research, the paint dries in about 30 minutes. Often one single coat does the job formerly done by three coats of regular paint. In some cases, one coat of the paint has repelled marine growth on the wooden boats for 18 months.

The secret of the paint lies in its vinyl resin base which permits a much greater amount of cuprous oxide to be used. Cuprous oxide, a copper oxide, is the element which combats marine growth.

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PUBLIC HEALTH

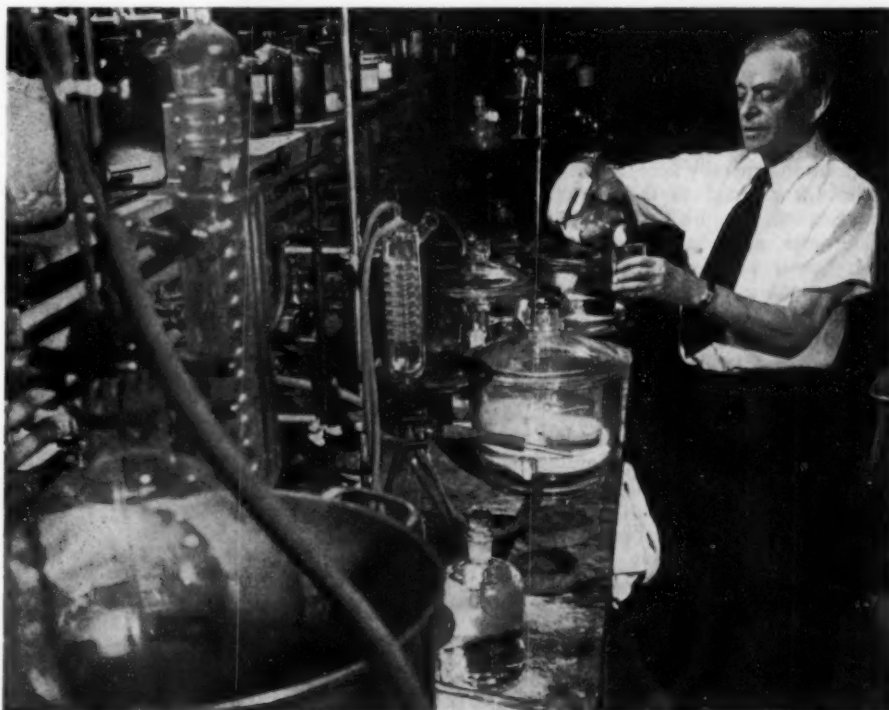
Future Health Exams To Test Body Chemistry

► PERIODIC PHYSICAL examinations of the future will be "metabolic examinations with appropriate tests" to uncover faulty body chemistry that may be the basis of cancer, arthritis, asthma and many other diseases.

This prediction was made by Dr. Casimir Funk, the scientist who put the word vitamin into our vocabulary almost half a century ago.

Dr. Funk, whose research in 1911 led to isolation of the anti-beriberi vitamin, now known as thiamine, in rice polishings, made his prediction at the dedication of the new Funk Foundation Medical Research Laboratory in New York.

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COINER OF "VITAMIN"—The scientist who made the word "vitamin" a part of our language almost half a century ago, Dr. Casimir Funk, was recently honored at ceremonies opening a new laboratory presented to him. Here he is shown at work in one section of the new laboratory.

ASTRONOMY

Earth Dwarfs Some Stars

Most white dwarf stars have diameters ranging from one-half that of the earth to four times the earth's. These stars are easy to identify but hard to observe.

► THE EARTH on which we live is larger than some of the stars shining in the heavens. Probably none of those picked up, even with the world's most powerful telescopes, are as small as the moon, but a few are not much larger.

The smallest star discovered to date, a white dwarf, is only 2,500 miles across. This means its diameter is only about 350 miles greater than that of the moon and about one-third that of the earth. Another of these midget stars is known to be about the size of Mercury, the smallest of the planets and only 3,000 miles across. Several others are known to be smaller than the earth, which is some 7,900 miles across.

The diameters of most white dwarf stars lie between one-half that of the earth and four times that of the earth, Dr. W. J. Luyten of the University of Minnesota estimates. The sun and the larger planets such as Jupiter and Saturn are giants in comparison.

White dwarf stars are noted for their small size, high surface temperature and fantastically high densities. So much matter is packed into these tiny stars that a cubic inch of them, if brought down to earth, might weigh anywhere from one to 1,000 tons.

"The paradox of these stars is that they are at once the easiest stars to identify and the hardest to observe," Dr. Luyten reports

in the *Astrophysical Journal* (Sept. 1952). Nearly all of them are so extremely faint and so blue that they are most difficult to find.

The color of these stars appears to be the best key to their real brightness. Besides being easier to observe, color is much more reliable than a study of the star's spectra or fanned-out light, the Minnesota astronomer points out.

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PHOTOGRAMMETRY

Military Needs Maps Even for Atomic Warfare

► THE AGE of atomic warfare where great nuclear explosions can sear vast areas in one devastating blaze will not put painstaking map-makers out of business.

Instead, the atomic age offers a great challenge to the map-maker's imagination and ingenuity, Maj. Gen. Herbert B. Loper, chief of the Armed Forces Special Weapons Project, told the American Society of Photogrammetry meeting in Washington.

The idea is not true that exploding an H-bomb anywhere in the general vicinity of the target is satisfactory. Considering all the money involved in creating such a bomb and in delivering it to the enemy, military strategists want to hit their target "right on the nose."

Gen. Loper cited an example in which one bomb, costing \$10,000,000 to make and deliver, could produce 100% destruction. But, in his example, if the bomb exploded 400 feet to one side of its intended mark, it would be only 75% effective. That, he pointed out, would mean a waste of \$2,500,000.

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BIOPHYSICS

Fight Cancer With New Radioactive Chemical

► TREATMENT OF cancer patients with the radiations from cesium 137 is being planned at the University of Michigan's Medical School. At only one other place in the country, Oak Ridge, Tenn., will a cesium source be used to aid the fight against cancer during the next few years.

The radioactive cesium, a by-product of the uranium fission process in the pile at Oak Ridge, has to be separated from the other radioactive substances produced, so only a limited amount is available. If the cesium treatment is successful, however, it would mean the addition of a valuable source of high-powered, long-lived radiation to the anti-cancer arsenal.

Results of the cesium therapy will be compared with those from X-ray and cobalt-60 treatment, Drs. Fred J. Hodges and Isadore Lampe of the University report. In the Atomic Energy Commission's research on cesium therapy at Oak Ridge, the radioactive source will be rotated about the patient.

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ARCHAEOLOGY

First American Tools?

► MAN-MADE TOOLS found in California may have been used by man there more than 100,000 years ago, Dr. George F. Carter, archaeologist and geographer with Johns Hopkins University, Baltimore, reported in the *Southwestern Journal of Anthropology* (Winter Issue).

The simple stone tools which must have been formed by human hands, Dr. Carter said, were found buried in gravel beds laid down sometime before the fourth and last glacier, more than 100,000 years ago.

The more generally accepted estimates as to the age of man in the western hemisphere up to now lie between 10,000 and 20,000 years ago.

Dr. Carter believes the first Americans crossed over the Bering Straits at the onset of the third glacier, when a land bridge connected Siberia with Alaska. This could set a possible date for man's invasion of the western hemisphere as far back as 400,000 years ago, Dr. Carter said.

Archaeologists once thought relics of the Folsom man were the oldest indications of man in America, dating the Folsom relics at about 20,000 years old. But recent research using the method of radiocarbon dating showed the Folsom remains to be only about 4,300 years old. The oldest human objects from America dated by the radiocarbon method were a pair of sandals, found to be about 9,000 years old.

Dr. Carter employed two yardsticks to determine the age of the sites. The first was an analysis of the chemical content of the soil. Because of the presence of certain minerals and the absence of others at various levels, he concluded that the soil had been in place during the humid, rainy

glacial times, as well as recent arid times.

The second method is based on the variations in height, where cut by roads and gravel pits, of interglacial terraces.

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100,000-YEAR-OLD TOOLS? — Dr. George F. Carter of Johns Hopkins University points to markings on a large rock that he believes shows it was chipped by the earliest humans in America, over 100,000 years ago. This is about 80,000 years earlier than other archaeologists estimate man was on the continent.



MAKING LOCKFOAM RADOMES—Thick molasses-like Lockfoam is being poured into pre-heated dies, after which it is cured for six hours at 200 degrees Fahrenheit, then cooled for two. The radomes, when trimmed, radar-checked and painted, become part of Lockheed F-94C Starfires.

MEDICINE

Strep. Infections High

► IF YOU and your friends think the colds you have been having this winter seem worse and different than usual, it may be that you have been having streptococcus infections. This is particularly likely to be the case if there was a bad sore throat with the cold.

Streptococcus infections and "strep. sore throat" as we used to call it seem to have gone out of fashion. Nowadays it is fashionable to have a virus infection.

But two or three times the usual number of cases of streptococcal infections are being reported each week to the U.S. Public Health Service. These infections, including the ones that are classified as scarlet fever, are milder than those reported a decade or so ago. Probably many of the milder ones go unreported and are considered by the victims as unusually bad colds.

It would be hard even for a doctor to tell the difference unless he had laboratory tests made. Even the tests might not be too helpful because there might be other germs besides streptococci showing up in material swabbed from the throat.

Even these mild strep. infections, however, can have serious consequences. In one outbreak of several hundred cases this winter, a score or more of the patients de-

veloped rheumatic fever and some others got the kidney disease, nephritis.

Enlarged glands and ear infections, especially in children, are other complications that may follow strep. infections.

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MEDICINE

Baby's Heart Beats Triple Usual Rate

► THE CASE of a baby whose heart beat at the rate of 310 to 313 beats per minute was reported by Dr. James Alexander Lyon of Washington, at the meeting of the Pan American Medical Association. The association met in a "cruise congress" aboard the S.S. Nieuw Amsterdam.

The normal rate of heart beat in a newborn baby is about 130. In adults the heart rate is about 70 to 80 beats per minute.

The baby Dr. Lyon reported on was four and one-half weeks old. The very rapid heart rate was recorded by electrocardiograph at the onset of the streptococcal meningitis which killed the baby.

Dr. Lyon found 16 cases in medical records of heart beats of about 300 per minute.

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INVENTION

New Alarm Wakens Sleeping Driver

► FALLING ASLEEP at the wheel can be prevented with an alarm patented recently.

If the driver falls asleep or into what the inventor of the alarm calls an "auto-hypnotic reverie," a "very loud as well as unpleasant" horn is set off, thus bringing the driver to his senses almost immediately.

"Once this has occurred," John A. Mathis, Pinckneyville, Ill., the inventor, says, "a driver if he is careful will, in the interest of his own safety as well as the safety of others, bring his vehicle to a stop off the road, shut off the warning system . . . and then take at least a short nap before attempting to drive farther."

The alarm is a two-stop device. Periodically a light way to the right on the dashboard flashes on. If the driver does not hit a switch on his steering wheel within 20 or 30 seconds, the horn goes off.

Mr. Mathis says that, in a state of auto-hypnotic reverie, one loses his peripheral vision, or the ability to see things out of the corner of the eye while looking straight ahead. Thus, in his reverie the driver would not notice the light flashing on and the horn would go off.

The invention can be adapted to planes and locomotives. In these cases a third stage could be added, Mr. Mathis suggests. If there is no response to the horn, the pilot of the plane might automatically be ejected, or the locomotive brought to a halt.

Patent number of the alarm is 2,625,594.

Science News Letter, January 24, 1953

WILDLIFE

Waterfowl Winter Safely on S. C. Refuge

► WHILE THE guns of duck hunters resound along the greater part of the Atlantic seaboard, large concentrations of waterfowl are safely wintering on the Cape Romain National Wildlife Refuge, under the protection of the U. S. Fish and Wildlife Service.

This haven for wildlife is located about 20 miles northeast of Charleston, S.C. Bulls Island, situated in the refuge, is a 5,000-acre semi-tropical wonderland for ornithological studies.

Fresh water ponds have been constructed on the island, and resulting growths of banana water lily, widgeon grass, sago pond weed and wild rice attract the migrating waterfowl.

An abundance of live oaks, heavily festooned with epiphytic Spanish moss, and magnolia, cabbage palm and pine are the principal flora of the island.

Ornithologists have recorded about 245 species of bird life on the island. But, mysteriously, the blue jay, Carolina chickadee, loggerhead shrike, tufted titmouse and the bobwhite quail—all common Carolina birds—do not occur on the island.

Science News Letter, January 24, 1953

MEDICINE

Technique Eliminates Doubtful Syphilis Tests

► AN IMPROVEMENT on a procedure originally developed at Johns Hopkins Medical Center, Baltimore, is eliminating doubt in 53% of the cases where positive Wassermann and Kahn tests for syphilis seem to conflict with case histories.

The new laboratory technique was developed by Dr. Ruth Boak, professor of infectious diseases, and her associates at the University of California at Los Angeles. It involves the reaction of spirochetes of syphilis from infected rabbits with the serum of patients being examined.

If the subject has syphilis, antibodies in the serum, formed in the course of the disease, will immobilize the spirochetes. If he is free from the disease, the organism will remain mobile.

"The technique cannot be used as a primary test for syphilis," Dr. Boak points out, "because it will not work in the early stages of the disease. Syphilis antibodies do not form until the subject has had the disease for several weeks."

The technique is being used in a cooperative program sponsored by the San Fernando Veterans Administration Hospital, the Los Angeles City Health Department, the State Health Department and the department of infectious diseases of the U.C.L.A. School of Medicine.

Science News Letter, January 24, 1953

INVENTION

Write Phone Numbers Right on Fixture

► EMERGENCY TELEPHONE numbers can be written on a fixture which clamps right onto the phone. The numbers come into view when the handle of the ordinary French telephone is lifted. Inventor is Dwight Griswold, West Hartford, Conn., and he received patent number 2,624,965.

Science News Letter, January 24, 1953

WILDLIFE

Indian Summer Hit Duck Hunting

► BALMY, INDIAN summer days, the delight of ordinary people, caused great anguish among that hardy race, the duck hunters, last fall.

Although there was no shortage of waterfowl during the 1952-53 season, which closed Jan. 10, the warm, sunny days with less than average rainfall last autumn resulted in gradual, spotty migration and poor bags for the hunters, the U.S. Fish and Wildlife Service reports.

Winter blizzards, beloved by all duck hunters, set in about Thanksgiving, leading to the largest mass migrations of the season. But by then it was too late in the season for hunters in northern states.

In the Atlantic flyway, there was an increase in both ducks and geese over last season. Along the Mississippi and Central flyways, where hunting was hardest hit by fair weather, waterfowl were slow in concentrating until mid-December. Mallards were seen in exceptionally large numbers in the Illinois valley. Waterfowl were present on the Pacific flyway in about the same numbers as last season.

Science News Letter, January 24, 1953

STATISTICS

Fewer Wedding Bells For Rest of Decade

► IT WILL be 1960 or later before the marriage rate in the United States starts climbing again. Until then, there will be fewer and fewer marriages, predict statisticians of the Metropolitan Life Insurance Company, New York.

The reason is high marriage rates during and immediately after World War II left relatively few unmarried men and women. When the war babies of that period reach marriageable age in large numbers, then the next upswing in marriages will occur.

Science News Letter, January 24, 1953

TECHNOLOGY

Tool Joins Broken Wires In Less Than 30 Seconds

► WITH TWO squeezes of a new tool developed under sponsorship of the Signal Corps Engineering Laboratories, Fort Monmouth, N. J., a GI can repair broken field communication wires in less than 30 seconds on shell-torn battlefields.

The lightweight wire splicer should save many lives. The job now takes about three or four minutes, and frequently occurs where the repairman will come within the gun sights of the enemy or within shrapnel range of the enemy's shells.

Resembling a pair of pliers, the splicer can, in triggerlike fashion, feed 10 repair cartridges to its "business end." The broken ends of the wire are squeezed in a specially designed wire cutter and stripper attached to the handle. Then they are put in an insulating repair cartridge and are squeezed again. That finishes the job.

At present, broken wires must be scraped by hand. The strands must be tied in a square knot and wires must be wound around the knot. Rubber insulating tape and friction tape also must be wound around the splice.

In cold weather the job takes longer because the repairman cannot wear gloves. But using the new device, he can wear gloves, or mittens if desired.

The tool comes with a carrying case with hooks on the repairman's belt. The case also has four pockets for spare magazines of connectors.

The splicer was developed by Aircraft-Marine Products, Inc., Harrisburg, Pa., and currently is undergoing field tests.

Science News Letter, January 24, 1953

IN SCIENCE

BIOCHEMISTRY

Blood Plasma Proteins Carriers for Hormones

► CERTAIN BLOOD plasma proteins appear to serve as carriers for such steroid chemicals as sex and adrenal cortical hormones, which otherwise might have difficulty in reaching organs at a distance from the site of their formation.

Two University of California at Los Angeles scientists, Drs. Clara M. Szego and Sidney Roberts, find that the hormones, which are fatty in nature, combine with the proteins and are thus rendered more water soluble and can readily circulate in the watery medium of the blood.

In addition, the studies suggest that the protein-bound hormones may actually be the physiologically active form of the hormone. This activation by protein binding may be the mechanism by which such minute amounts of steroids, 1/100,000 of a gram in a quart, found in the blood are capable of exerting such profound effects on many body structures.

The studies have also indicated that the binding of the steroid hormones to the plasma proteins is another of the many functions carried out by the liver. It has been demonstrated that the capacity of damaged liver to perform this function is different from the normal. This work is being extended to include cancerous liver.

Science News Letter, January 24, 1953

ENGINEERING

Quaint Snow Fences May Yield to Paper Ones

► PAPER SNOW fences may replace those picturesque picket fences now often used to stop loose snow from blowing and drifting across highways.

Tests in Michigan showed paper fences did as good a job as regular wooden-slat fences, B. R. Downey, maintenance engineer of the Michigan State Highway Department, reported to the Highway Research Board meeting in Washington.

In the fall of 1951, two 12-inch strips of waterproof paper, like that which is used in curing concrete, were stapled to pieces of wood wired to steel posts spaced eight feet apart. In April of 1952, a field check showed the fences all were in good condition. They had withstood bad sleet storms, heavy rains, high winds and deep snows.

Only 300 feet of the five-mile total were damaged. The damage was attributed mostly to stray cattle and to thoughtless children. It was easily repaired. Most of the undamaged fence could be reused again this winter.

Science News Letter, January 24, 1953

SCIENCE FIELDS

BACTERIOLOGY

Develop "Diets" for Study of Spirochetes

► DEVELOPING "DIETS" for tiny creatures so small they can be seen only through a microscope is the unique job of Dr. Meridian R. Ball, University of California at Los Angeles bacteriologist.

Dr. Ball is especially interested in providing special "diets" for spirochetes, tiny, highly-sensitive organisms that cause disease among animals and human beings.

"Laboratory studies which make possible diagnosis and treatment of some of the diseases caused by the organisms depend upon cultures of the spirochetes grown in the laboratory," Dr. Ball points out. "The organisms will only grow when fed a highly complex 'diet.' Some of them have never been known to grow outside of living animals. For example, the syphilis spirochete has never been cultured."

Dr. Ball has recently devised a "diet" for a spirochete that causes leptospirosis, a disease common to cattle, dogs and swine and sometimes transmitted to men who work with animals. Her laboratory is one of the few places where this particular spirochete is maintained for diagnostic tests.

Work is under way in Dr. Ball's laboratory to develop a similar nutritional medium for the spirochete that causes relapsing fever, an organism not successfully cultured in the laboratory. Such an approach may also make it possible to culture the syphilis spirochete some day, she says.

Science News Letter, January 24, 1953

ANIMAL NUTRITION

Soap and Water Can Vie With Antibiotics

► SCRUBBING SOAP can compete with antibiotics as a growth stimulator for young chicks, experiments at the U. S. Department of Agriculture indicate.

Several antibiotics, when fed to chicks up to 12 weeks old, lead to very marked increase in rate of growth. But Agriculture Department research has shown that chicks raised in clean, new pens grow larger and faster than antibiotic-fed chicks kept in old, soiled pens.

The secret is that the cleaner the quarters, the fewer harmful bacteria there are around to retard the growth of the chicks. Scientists believe the beneficial effects of antibiotics come from their ability to combat harmful bacteria that infect the chicks. But using clean pens goes one step further, by eliminating the source of most of those infections, filth.

The double-barreled weapon of using both new pens and antibiotics operated bet-

ter than either of the two alone in stimulating growth, the Agriculture Department scientists said.

Chicks removed from new to old quarters and taken off antibiotics at the age of four weeks showed a slump in growth rate temporarily. This, the poultry specialists said, indicates that chicks not previously exposed to harmful bacteria must go through a period of adjustment, with a resulting loss in growth efficiency.

Science News Letter, January 24, 1953

VETERINARY MEDICINE

Dogs Poisoned Quickly By Auto Exhaust Gases

► DOGS ARE among the animals most quickly poisoned by the carbon monoxide in auto exhaust gases. Sportsmen should take extra precautions when carrying their bird dogs on hunting trips, otherwise the dog's field performance may be poor.

Dogs should not be carried in trailers or in the trunks of cars unless an extension has been added to the exhaust pipe so that the harmful gases do not swirl around the animal. Flexible hose makes a satisfactory exhaust pipe extender.

When trailers are used, the extension should run from the exhaust pipe to the upper rear part of the trailer. When auto trunks are used to carry dogs, the exhaust tube extension should run up the car's body so that exhaust gases trail from the auto well above the dog's nose.

Full details of the dangers of carbon monoxide poisoning to humans and dogs are reported by Andrew J. White, director of Motor Vehicle Research, in the booklet, "Carbon Monoxide: Your Car and You."

Science News Letter, January 24, 1953

PLANT PATHOLOGY

Killing Coffee Disease Foiled by New Hybrid

► OUR BREAKFAST cup of coffee and the one and a third billion dollar yearly coffee industry in Latin America has been saved.

Probably few of the Americans who drink 115 billion cups of coffee a year had any idea that their favorite brew was in danger of extinction. But a rust disease called "a killer" by experts threatened the coffee plants of the species Arabica grown in Latin America. This rust disease, Hemileia, virtually wiped out the coffee industry of the eastern hemisphere in the late 19th and early 20th centuries.

A coffee hybrid resistant to this rust disease has been discovered in South India by Drs. Frederick L. Wellman and William H. Cowgill of the U. S. Department of Agriculture. Seeds of this hybrid have just been received for propagation quarantine in the USDA plant introduction garden at Glenn Dale, Md. If they can be grown successfully in this hemisphere, coffee will have been saved, at least for the present.

Science News Letter, January 24, 1953

INVENTION

Helicopter-Airplane Combination Invented

► A COMBINATION helicopter-airplane, which uses its propeller as rotor blades for flying vertically or hovering, and as a propeller for forward flight, has been invented.

David C. Prince, Schenectady, N. Y., has assigned his patent, number 2,622,826, to the General Electric Co., Schenectady.

Before take-off, the plane or helicopter stands on its tail, on a sort of tripod landing gear. Its nose sticks straight up into the air. Wings stand out horizontally from the side of the fuselage. On the nose tip is mounted a huge propeller. The blades of this propeller can be variously warped or twisted and their pitch variously changed.

Before take-off, their pitch and warp are fixed in such a position that they make efficient helicopter rotor blades. The craft takes off going straight up. It hovers in the air. The pitch and warp are changed, the craft turns on its side and off it goes, flying like an airplane.

Two small propellers on the end of the wings provide torque control when the craft is performing like a helicopter. In another version, the nose becomes the tail and the propeller pushes the plane in horizontal flight, rather than pulling it.

Science News Letter, January 24, 1953

BIOCHEMISTRY

Coated Drug Better For Hodgkin's Disease

► A BETTER form of a drug for treating Hodgkin's disease and chronic leukemia is announced by Drs. Edith Paterson and P. B. Kunkler of the Christie Hospital and Holt Radium Institute, Manchester, England, and Dr. A. L. Walpole of Imperial Chemical Industries, Ltd., research laboratories, Manchester, in a report to the *British Medical Journal* (Jan. 10).

The drug is triethylene melamine, or T.E.M. for short. Instead of giving it by injection into the veins or in gelatin capsules to be swallowed, they tried giving it in tablets, or pills, coated to protect the T.E.M. from stomach acids before it reached the intestines where it is absorbed.

Although this medicine did not cure any of the far advanced patients treated, it brought "satisfactory remission," or let-up of symptoms in more than two-thirds of 22 patients with Hodgkin's disease. All but five of the patients showed improvement in general condition.

"Encouraging," state the scientists, is the fact that patients with chronic lymphoid leukemia responded, since most other drugs have been less effective in this than in the myeloid form of leukemia.

The trials show that with this form of the drug its effect is related with "reasonable consistency" to the size of the dose, so that doctors can prescribe it in more surely effective doses.

Science News Letter, January 24, 1953

GENERAL SCIENCE

Test Your Science Aptitude

Thousands of high school seniors tried to answer the questions given here in tests to rate their potential scientific ability as part of the National Science Talent Search.

By WATSON DAVIS

► DO YOU have potential scientific talent? You can get some idea by taking this science quiz, made up of a sample of the questions in the two-and-one-half-hour Science Talent Search test, just completed by thousands of high school seniors throughout the country.

Each year since 1942 more than 15,000 high school seniors have attempted this test. Only about 2,000 have been able to complete the test and fulfill other qualifications each year. Of these, 40 come to Washington every spring to take part in the annual Science Talent Institute and compete for thousands of dollars in scholarships.

Another 260 receive honorable mention each year and most of these are offered scholarships by colleges and universities all over the nation. The Science Talent Search is supported by the Westinghouse Educational Foundation and conducted by Science Clubs of America, administered by SCIENCE SERVICE.

The task of seeking out potential science talent grows more urgent each year. Although the nation has doubled its number of scientists in the past 12 years, the demand for them still keeps well ahead of the supply. The need to stay ahead of the Soviets in technology makes imperative the training of still more scientists, technicians and engineers.

U.S.S.R. Progress

The Soviet Union has also made great progress in the number of scientists it has trained. Its progress has been good enough to deny this country complacency in our record of training new scientists.

The Science Talent Search represents a scientific method of seeking out each year those high school seniors with the greatest aptitude for scientific careers. But it does more. In high school after high school, records show, the very existence of the test, the interest manifested in it, serve as spurs impelling many students toward a study of the sciences.

When you try these questions, none of you, it can be confidently predicted, will answer them all correctly within the time limit. None of the thousands of high school seniors who will take the test in future years will ever make a perfect score. None ever has. Even the most brilliant scientists, firmly established in their careers, would most likely miss some of the questions on the full test.

If you decide the test is too tough for you, or if you start it and then do not finish it, you will react as many thousands of high school seniors did. The test is made especially difficult, partly in order to eliminate all but the persevering. Perseverance is a quality especially necessary in scientific research.

The test is designed to measure science aptitude, not legal aptitude, nor other kinds of aptitude. Failure, therefore, means only that your aptitude probably does not lie in science.

As a matter of fact, very few people are gifted with the special abilities which make good scientists. This nation now has only about 200,000 scientists. About 46,000 of these have earned Ph.D. degrees. In addition, there are about 500,000 engineers and about 300,000 physicians, veterinarians and others in the health field.

Very few of this group can be called research scientists, devoting their time to seeking out the answers to the fundamental questions proposed by nature.

Ready now to test yourself? There are three parts to the test. You should be able to answer the sample questions in not more than a half hour. These questions, on the average, are from the easier sections of the test, although 12 and 45 in Part A and 81 in Part B are among the toughest in the full test. Questions 1 and 2 in Part A are among the easiest.

Place an X next to the answer you think most nearly correct in each question in Part A. In Part B, first read the paragraphs that precede the questions and then use an X to indicate the answer in each question you think most nearly correct. Pick the correct answer in Part C.

Time yourself so you do not go over one-half hour and answer all the questions in one session.

After you have completed the test, score yourself, using the answers printed on p. 63.

SCIENCE QUIZ—Sample questions, taken from two-and-one-half-hour Science Talent Search examination given this winter, are now revealed on this and the opposite page. Try them yourself to find out whether you have potential scientific ability.

DIRECTIONS: Four possible answers are given for each question. Put an X in the parentheses in front of the number corresponding to that answer which you think is most nearly correct.

1. What are the missing words in the following sentence? "The terms, _____ and _____, refer to the workability of metals."

- () 1. ductile — hobbing
- () 2. ductile — malleable
- () 3. hobbing — toning
- () 4. malleable — toning

2. Which of the following best defines the environment of an organism?

- () 1. its location in reference to material and social causes and effects
- () 2. the land, air, or water on which or in which it lives
- () 3. the locality where it lives
- () 4. the surroundings and conditions in which it lives

3. This diagram is most likely to be found in a book on

- () 1. aeronautics
- () 2. biometry
- () 3. limnology
- () 4. psychometry



4. Fluorides are added to drinking water in order to

- () 1. improve fertility
- () 2. increase metabolism
- () 3. prevent typhoid fever
- () 4. reduce caries

5. The number of calories necessary to raise the temperature of 13 grams of water from 25° C to 34° C is

- () 1. 0.69
- () 2. 9.9
- () 3. 13.0
- () 4. 117.0

6. Density may be measured in terms of

- () 1. coefficient of resistance
- () 2. grams per square centimeter
- () 3. impermeability to water
- () 4. pounds per cubic foot

7. Which of the following is not a mammal?

- () 1. platypus
- () 2. porpoise
- () 3. turtle
- () 4. whale

PART A

6. $\text{Ca}(\text{H}_2\text{PO}_4)_2$ is used in

- () 1. alloys
- () 2. dentifrices
- () 3. fertilizers
- () 4. pigments

8. In general, the energy carried by a sound wave increases with the

- () 1. amplitude
- () 2. complexity
- () 3. period
- () 4. wave-length

10. Thorium is a

- () 1. bone of mammals
- () 2. food preservative
- () 3. metallic element
- () 4. satellite of Jupiter

11. What are the missing words in the following sentence? "Lenses in eyeglasses for far-sighted persons are _____, or _____."

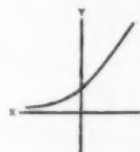
- () 1. concave — magnifying
- () 2. concave — reducing
- () 3. convex — magnifying
- () 4. convex — reducing

12. Which of the following is found in the greatest quantity in automobile exhaust gases?

- () 1. carbon monoxide
- () 2. carbon tetrachloride
- () 3. sulfur trioxide
- () 4. water

28. This curve is

- () 1. exponential
- () 2. Gaussian
- () 3. ogive
- () 4. transcendental



45. This is a diagram of a

- () 1. catenary
- () 2. catenoid
- () 3. cissoid
- () 4. hyperbola



PART B

SECTION B

Hunger, like the other appetites, is more powerful in impelling men to action when the means for its appeasement are difficult to procure and the possession of the means insecure over a period of time. In primitive cultures, therefore, hunger as a drive plays a more important role than in advanced societies. This distinction does not hold for all individuals in a society because societies do not advance as units. Nevertheless, a nutritive deficiency leading to hunger contractions is relatively less frequent among the unemployed in modern society than among those primitive groups which rely upon hunting for their sustenance.

QUESTIONS ON SECTION B

53. Which of the following inferences can most properly be made on the basis of the statements in the paragraph?
- Hunting is always a necessity, and never a sport, in primitive societies.
 - Members of advanced societies spend much less time thinking about food than members of primitive societies.
 - None of the other three conclusions given here can properly be inferred on the basis of the information given in the paragraph.
 - The hungriest people in advanced societies have, nevertheless, more to eat than the best fed members of primitive societies.
54. On the basis of the paragraph, which of the following statements is most tenable?
- A society is composed of individuals who do not respond differentially to the same drive.
 - Equally unsatisfied appetites are stronger drives in primitive societies than in modern societies.
 - Hunger is a more powerful drive to action than the other appetites.
 - Society is homogeneous in its changes.

PART C

DIRECTIONS: Four possible answers are given for each of the remaining questions. Put an X in the parentheses in front of the number corresponding to that answer which you think is most nearly correct.

105. Following is the average height in inches, and weight in pounds, of a given population.

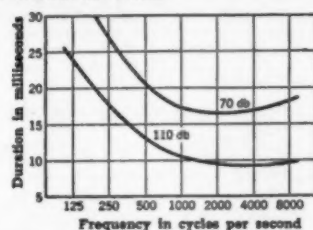
Height	Weight
74	164
73	163
72	162
71	160
70	157

Which of the following graphs—A, B, or C—is the correct representation of the data?

- A
- B
- C
- All are correct.

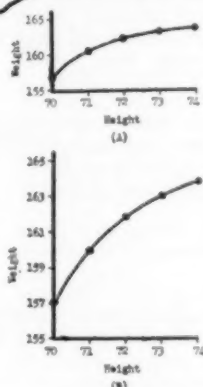
SECTION I

The diagram shows the minimum durations necessary for a tone to sound like a tone.



QUESTIONS ON SECTION I

60. According to the graph, which of the following statements is most nearly true?
- The higher the frequency of tones, the greater is the loudness, when duration is equal.
 - The pitch of tones is expressed in decibels.
 - Tones in the lower frequency range require greater duration to be heard than tones of higher frequencies.
 - Tones must last almost .010 seconds before they sound like tones.
61. The minimum durations shown were probably established on the basis of
- measurement of one complete sine wave
 - judgments of recognizing a tone or a click
 - measurement by means of a loudness meter
 - the logarithmic relationship of duration and pitch



PUBLIC HEALTH

Long-Freezing of Pork Stops Painful Trichinosis

► THE HOME freezer or even the freezer compartment in the home refrigerator can be used to protect the family from trichinosis. This painful and serious disease comes from eating undercooked pork containing the worm-like parasites called trichinae.

Cooking kills these parasites, but the meat must be thoroughly cooked. Directions usually are to cook until the meat is white instead of pink.

Freezing also kills the parasites, but the temperature must be really low and held there for a considerable time. Dr. L. A. Spindler, parasitologist of the U. S. Department of Agriculture, has found that refrigeration for 20 days in a freezer at five degrees Fahrenheit will kill the trichinae when the meat is not more than six inches thick. If the meat is thicker than six inches, another 10 days at five degrees Fahrenheit is required to kill all the parasites. If the freezer can be set to 10 degrees below zero Fahrenheit, the trichinae will be killed within 10 days in a piece of meat six inches thick. At twenty degrees below, six to 12 days is enough.

Science News Letter, January 24, 1953

ANOTHER LANGUAGE Is a MUST For Modern Scientists

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The 40 high school seniors who come out on top will be in Washington Feb. 26 through March 2, for the Twelfth Annual Science Talent Institute. They will meet and talk with leading scientists, visit some of the extensive government research laboratories, hear scientific lectures and attend a final banquet when the winners of the \$1,000 in scholarships will be announced, and receive special gold Science Clubs of

America pins. The scholarships can be used at any accredited school selected by a winner.

The science aptitude test was compiled by two of the four judges of the Science Talent Search: Dr. Harold A. Edgerton, vice-president, Richardson, Bellows, Henry & Co., New York, and Dr. Stuart Henderson Britt, vice-president and director of research, Needham, Louis & Brorby, Inc., Chicago.

The other two judges of the Science Talent Search are Dr. Harlow Shapley of the Harvard College Observatory, president of SCIENCE SERVICE, and Dr. Rex E. Buxton, psychiatrist of Washington.

If you want to see the complete aptitude test used in the Twelfth Annual Science Talent Search, send ten cents in coin to SCIENCE SERVICE, 1719 N St., N.W., Washington 6, D. C., and ask for the science aptitude test.

Science News Letter, January 24, 1953

The bat is the only winged mammal.

A new warmth fiber used in some boys' clothing is made from natural gas and common salt.

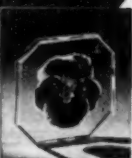
Embed Real Flowers In New MAGIC PLASTIC

Create lovely things like the pansy coaster shown—made by embedding real pansies in Castolite Liquid casting plastic. Comes crystal clear or may be colored. Also make jewelry, book ends, candle holders, picture frames, figurines. Embed real flowers, butterflies, coins, photos, for plaques, paper weights, tiles, other objects. Use only home tools.

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Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N. W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

APPRAISING PERSONALITY: The Use of Psychological Tests in the Practice of Medicine—Molly Harrower—Norton, 197 p., illus., \$4.00. By means of a conversation between physician and psychologist, the author gives the general practitioner or the layman a better idea of what services the clinical psychologist can perform as well as the kind of measures he uses.

BUILDING AMERICA'S HEALTH: Volume 1, Findings and Recommendations—President's Commission on the Health Needs of the Nation, Paul B. Magnuson, Chairman—Govt. Printing Office, 80 p., illus., paper, 50 cents. The Commission recommends that Congress establish a Federal Health Commission.

CAREER: The Annual Guide to Business Opportunities, 1953 Edition—William A. Douglass and Paul Bancroft, III—Career Publications, 152 p., illus., paper, \$2.00. Here employers in various fields, including physics and chemistry, display their advantages to attract young graduates.

THE EXPANSION OF THE UNIVERSE—Paul Coudere—Macmillan, 231 p., illus., \$6.00. A book for both astronomer and layman on astronomical measurement and interpretation, showing how vastly the universe of Newton has changed in becoming the expanding universe of today.

GEOLOGY OF THE SEBASTOPOL QUADRANGLE CALIFORNIA—Russell B. Travis—California Division of Mines, 33 p., illus., paper, \$1.60. The most important mineral resources of this particular area are sand and gravel and crushed rock, although other minerals have been exploited at times.

GYPSUM IN CALIFORNIA—William E. Ver Planck—California Division of Mines, 151 p., illus., \$1.85. California has fourth place among the states in tonnage of gypsum produced.

HIGHWAY RESEARCH BOARD PROCEEDINGS OF THE THIRTY-FIRST ANNUAL MEETING, Washington, D. C., January 15-18, 1952—Fred Burggraf, W. N. Carey, Jr. and Walter J. Miller, Eds.—National Academy of Sciences-National Research Council, Publication 238, 690 p., illus., \$7.50. Contains papers on a variety of subjects of interest to highway engineers from the

physics of head-on collisions to the thermal analysis of soils.

HOUSING NEEDS AND PREFERENCES OF FARM FAMILIES: A Comparison of Data From Studies in Four Regions—Mildred S. Howard, Avis Woolrich and Emma G. Holmes—Govt. Printing Office, AIB 96, 63 p., paper, 30 cents. In the northeastern states, the preferred farm house would have more than one story, attic, basement, two porches and a fireplace. In the South, a one-story house is better liked.

MINERALS OF CALIFORNIA 1952 SUPPLEMENT—Joseph Murdoch and Robert W. Webb—California Division of Mines, 46 p., paper, 35 cents.

NATIONAL ANTHEMS—Paul Nettel—Storm, 216 p., \$3.50. Particularly useful to teachers, musicians and world travelers is this book which tells something of the author, history and spirit of the many patriotic songs and national anthems.

NEW BIOLOGY 13—M. L. Johnson and Michael Abercrombie—Penguin, 128 p., illus., paper, 50 cents. A new collection of British origin containing articles in the field of biology.

OUR COMMON NEUROSIS: Notes on a Group Experiment—Charles B. Thompson and Alfreda P. Sill—Exposition Press, 210 p., \$3.50. Reproduction of a series of articles which originally appeared in "Mental Health." These were prepared during an unusual experiment in group living and group analysis under the direction of the late Dr. Trigant Burrow.

POLIOMYELITIS: Papers and Discussions Presented at the Second International Poliomyelitis Conference—Morris Fishbein, Chairman, Committee on Publications—Lippincott, 555 p., illus., \$7.50. These papers will interest not only the medical scientist but also all those having a part in the fight against infantile paralysis.

SCIENCE IN EVERYDAY LIFE—Ellsworth S. Obourn, Elwood D. Heiss and Gaylord C. Montgomery—Van Nostrand, 612 p., illus., \$3.80. This high-school text helps the student to learn by trying things out and by solving problems. A generous supply of illustrations, many in color, adds to the interest.

SCIENCE NEWS 26—A. W. Haslett, Ed.—Penguin, 128 p., illus., paper, 50 cents. A new collection of brief articles of current interest from various fields of science.

A TELEVISION POLICY FOR EDUCATION: Proceedings of the Television Programs Institute Held Under the Auspices of the American Council on Education at Pennsylvania State College—Carroll V. Newsom, Ed.—American Council on Education, 266 p., illus., \$3.50. Reservation of about one-tenth of television channels for educational use dumped in the laps of educators a new and powerful educational tool with untold possibilities.

Science News Letter, January 24, 1953

Gasoline has three times the potential energy of TNT.

CHEMISTRY

Parsnips Plus Chemical Make "Horseradish"

► **HOT STUFF**—that's the label pinned on allyl isothiocyanate, the chemical that gives pungency to both horseradish and mustard seed.

Some horseradish manufacturers were using the chemical's pungency to make ground-up parsnips taste like horseradish, so Dr. J. Carol and L. L. Ramsey of the U. S. Food and Drug Administration developed a method for telling the real stuff from the substitute. Reason for the adulteration is: parsnips cost about 10 cents a pound; horseradishes, about 60 cents per pound.

It is against the Pure Food and Drug Law to sell the parsnip substitute as horseradish in interstate commerce. The scientists spot the parsnips by their infrared spectra.

Science News Letter, January 24, 1953

INVENTION

Air Conditioned Auto Combined With Sun Visor

► A COMBINED air conditioner and sun visor for an automobile has been invented by Edwin E. Foster, Austin, Tex. Inside what looks like an ordinary outside sun visor over the windshield, there is a water reservoir. Water saturates a screen of material. Air entering the sun visor from under its lip is forced through this screen, thus being cooled. The air is then channeled around to the front side window where it enters the car.

Mr. Foster received patent number 2,625,425.

Science News Letter, January 24, 1953

PHYSICS

Machine Computing Helps Building Design

► ARMED WITH an adding machine, an advanced student at the University of Illinois worked four months analyzing the stresses that would surround a perfectly round bolt hole in a single thickness of metal. But problems such as that are "all in a second's work" for the University's new home-made electronic computer.

With its vacuum tubes and electrons, the machine can spin out answers to such engineering questions as "what would happen to a building of this design if an atomic bomb fell nearby, or if an earthquake rumbled underneath it?" It can figure out what happens when a heavy load moves across a bridge, a problem so complex it never has been analyzed thoroughly.

Under the supervision of Prof. N. M. Newmark, a group at the University's Structural Research Laboratory designed and built the computer. It will be available on a full-time basis for University research.

Science News Letter, January 24, 1953



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NATURE PHOTOGRAPHY WITH MINIATURE CAMERAS by Alfred M. Bailey (Denver Museum of Natural History). This eminent explorer and scientist displays his finest Exakta photographs and others along with explanatory material. 35 full page photographs. 64 pages. . . . \$6.00. Exakta Camera Co., 48 W. 29th St., N. Y. C. 1

RADIO

Saturday, Jan. 31, 1953, 3:15-3:30 p.m., EST
"Adventures in Science" with Watson Davis,
director of Science Service, over the CBS Radio
Network. Check your local CBS station.

T. R. McElhinney, vice-president and technical
director of the Valite Corporation, New Orleans,
discusses "Industrial By-Products from Sugar
Cane."

SURGERY

Ski-Type Needle Helps Sew Hearts

► A SKI-TYPE needle is the latest aid for
surgeons operating on human hearts. The
needle was invented by Dr. Gerald H.
Pratt of St. Vincent's Hospital of the City
of New York and New York University
College of Medicine, and was made with
the cooperation of Davis and Geck Com-
pany, Brooklyn, N. Y., manufacturers of
surgeon's sewing supplies.

The ski-shaped needle was made with
the base of the ski as a long square instead
of a flat surface. This allows the surgeon
to hold the needle securely at any angle
from 0 to 180 degrees, Dr. Pratt states in
the *Journal of the American Medical Asso-
ciation* (Jan. 10).

Science News Letter, January 24, 1953

CHEMISTRY

New Magnesium Isotope

► A NEW radioactive chemical, magne-
sium 28, has been created by Dr. Raymond
J. Sheline of Florida State University with
the aid of the University of California cyclo-
tron and the University of Chicago betatron.

This new radioactive isotope of magne-
sium is considered particularly important
because of its long half-life. Magnesium 28
has a half-life of 21.3 hours, more than 100
times that of the longest magnesium radio-
active isotope heretofore found, which was
a mere 9.6 minutes.

The long half-life means that scientists
can learn more about plant and animal life
processes with the aid of the new radio-
active chemical.

Dr. Sheline and associates are already
using it to learn more about photosynthesis.
This process of formation of sugars and
starches from carbon dioxide and water
under the influence of light takes place in
the chlorophyll tissues of plants. And
chlorophyll has magnesium in its molecule.
How the magnesium gets into the molecule,
since this only takes place in the plant
tissues, is a puzzle Dr. Sheline hopes to solve
through tracer studies with the new magne-
sium 28.

The new radioactive magnesium can be
made either by bombarding elemental sili-
con in the betatron or, fairly simply, by
bombarding metallic magnesium with alpha
particles in the cyclotron. The targets after

NUTRITION

Check Diet for Vitamin A

This is time of year when many families may be short on
vitamin A, found in yellow and green vegetables, as well as
calcium, from milk and milk products, and vitamin C.

► THIS IS the season to check your diet
for its vitamin A content. Children need
it for healthy growth, but grown-ups need
it, too.

They get it by eating fresh green and
yellow vegetables. At this time of year
many families, especially those who depend
on home gardens for their food supply, may
be short on vitamin A.

Calcium is one of the food elements most
often short in family diets, reports to the
National Nutrition Conference showed.
Best source of this is milk or milk products.
Remember, the recommended milk ration
is one quart daily for children, one pint for
adults.

Some of this, of course, may be taken in
food, instead of being drunk. Ice cream
and cheese are two popular milk products.
Cream soups, oyster and other fish stews,
cream sauces and custards are other foods
that can put milk into the diet.

Vitamin C is another diet requirement
which the conference heard was often short
in family diets. Citrus fruits and their
juices, tomatoes and tomato juice and raw
cabbage are good sources of this vitamin.
Thiamin, one of the B vitamins, is also
likely to be below the recommended
amount in many diets. This vitamin is
found in foods such as pork and whole
grain or enriched grain products, from
bread to breakfast cereals.

If you are looking for a new cheese dish,
to get calcium into the day's ration, try
this recipe for cheese and rice soufflé. It
comes from Miss Elizabeth E. Ellis, Uni-
versity of New Hampshire nutritionist.

1 cup hot cooked rice; 2 tablespoons table
fat; 3 tablespoons flour; $\frac{1}{4}$ cup milk; $\frac{1}{2}$
pound Cheddar Cheese (2 cups grated);
4 eggs; $\frac{1}{2}$ teaspoon salt; few grains pepper.

Cook rice according to kind used. Grease
a 6-cup casserole and make the cheese sauce.
Melt fat, add flour and milk. Stir until
sauce thickens; add the sliced or shredded
cheese and stir occasionally until melted.
Separate eggs, beat yolks with fork and
combine them with cheese mixture. Remove
from heat, fold in cooked rice. Pour over
stiffly beaten egg whites slowly. Cut and
fold in the mixture (never beat). Turn
into casserole. Bake 40 minutes at 325 de-
grees F. Serve at once.

Science News Letter, January 24, 1953

ELECTRONICS

Long Microwave System Hints End of Cables

► WIRES AND cables for long distance
transmission may be on the way out. More
and more, as radio reaches higher into the
frequency spectrum, messages are being sent
over microwave channels.

Most recent portent of things to come is
a new 1,840-mile microwave communica-
tion system, opened up along a pipeline
stretching from Texas to New Jersey. This
is the longest privately owned microwave
system in the world. It was built by Gen-
eral Electric Co., and will be used to check
pressure at various points in the pipeline,
for maintenance messages and for business
conversations between offices.

It used about one-hundredth the amount
of vital copper overground wires would use
and, at \$1,500,000, costs about half what a
wired system would cost.

Science News Letter, January 24, 1953

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Questions

ASTRONOMY—What color are stars smaller than the earth? p. 54.

ENGINEERING—Why may wooden snow picket fences be on the way out? p. 56.

MEDICINE—What could your "different" cold this winter have been? p. 55.

NUTRITION—What three diet essentials are apt to be left out at this time of year? p. 61.

PHYSICS—How many H-bombs would be needed to paralyze our big centers? p. 53.

STATISTICS—Why will there be fewer wedding bells in the next decade? p. 56.

TECHNOLOGY—What are the advantages of vacuum metallizing? p. 52.

Photographs: Cover, Harvard University; p. 51, Bell Telephone Laboratories; p. 53, Funk Foundation for Medical Research; p. 54, Johns Hopkins University; p. 55, Lockheed Aircraft Corp.; p. 64, Riverside Manufacturing Co.

Do You Know?

American doctors wrote 400,000,000 prescriptions during 1952.

More than 350 miles of roads in 17 states and Canadian provinces use rubber in the pavement.

A 60-watt light bulb produces enough light to stimulate egg production of 100 hens in the morning.

Two pounds of alloy steel can be drawn into a wire 20 miles long to make hair-springs for 300,000 watches.

Thor Heyerdahl, leader of the Kon-Tiki expedition raft across the Pacific, next plans to explore the Galapagos Islands off Ecuador.

YOUR HAIR

Its Health, Beauty and Growth

By Herman Goodman, M.D.

A medical specialist tells you what to do to save and beautify your hair, stimulate healthier hair growth, and deal with many problems, as: Dandruff—gray hair—thinning hair—care of the scalp—baldness—abnormal types of hair—excessive oiliness—brittle dryness—hair falling out—infection—parasites—hair hygiene—glands—diet—coloring—and myriad other subjects concerning hair.

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NUTRITION

Teosinte High in Protein

The poor man's corn of Central America and Mexico, closest known relative of corn, is found to be high in protein, much of which is the amino acid, methionine.

► A NEW aid to good nutrition, especially for peoples forced to live largely on vegetable and cereal diets, has been discovered in a plant called teosinte, known in Central America and Mexico as the poor man's corn.

Teosinte is the closest known relative of corn. The good news about it is that it contains more total protein than corn and, even more significant, more than twice as much of the amino acid, methionine, as corn.

This discovery was made by Drs. Irving E. Melhus, Francisco Aguirre and Nevin S. Scrimshaw of Iowa State College, Ames, at the Guatemala Tropical Research Center, Antigua, and the Institute of Nutrition of Central America and Panama, Guatemala.

Lack of the amino acid, methionine, is what makes the predominantly vegetable diets of peoples in underdeveloped areas of the world such poor nourishment. These people cannot get more methionine in their diet through meat and other sources of animal protein because of "basic agricultural,

economic and cultural reasons," Dr. Melhus and associates point out.

Ground teosinte, it now appears, might be mixed with wheat or corn flours or used alone to make biscuits, tortillas and other products that would add good protein to vegetable diets. It can be crossed with corn and possibly give a hybrid of higher protein and methionine content. Five such crosses have been made and while these did not differ significantly from corn in chemical composition, their progeny are expected to show marked variation in nourishing quality.

Teosinte kernels are smaller than corn kernels and have a hard, inedible hull. Natives of Central America and Mexico have grown teosinte with corn for a long time, have cultivated it as cattle feed, and in a few localities have eaten it themselves as a corn substitute, particularly in times of famine. Until now, however, little has been known of its nutritive value. Details of this study are reported in *Science* (Jan. 9).

Science News Letter, January 24, 1953

PEDIATRICS

Treat Child's Colds

► THE FREQUENT colds and repeated attacks of bronchitis, infectious asthma and pneumonia which many children get, even before school age, should be attacked by a vigorous program of penicillin treatment to prevent chronic, disabling lung diseases such as bronchiectasis, Dr. Walter Finke of Rochester, N. Y., declares in the *Journal of the American Medical Association* (Jan. 10).

Chronic lung and bronchial disease, he states, rivals tuberculosis as a cause for lost manpower and, in terms of production time lost, it exceeds the common cold in importance.

Absences and days lost from school were cut in half by the treatment program he advised, he reports. This consisted in giving penicillin, at first by injection and aerosol sprays. After the active infection had subsided, penicillin was given by mouth to prevent reinfections and relapses.

"Striking and immediate improvement" of the lung or bronchial condition and of the child's general health resulted, Dr. Finke reports.

Preschool children particularly need to have their repeated lung and bronchial illnesses treated vigorously, since lung damage often starts very early.

Dr. Finke thinks children get most of their colds, bronchitis and the like from

"intimate household contacts" and not, as generally believed, from outsiders, especially in school.

Science News Letter, January 24, 1953

TECHNOLOGY

Traffic Diary Records Problems on Highways

► A DEVICE that fits into an ordinary passenger car and records all stops, starts and speeds of an automobile as it moves through traffic has been developed at the University of California at Los Angeles.

It was designed by D. L. Gerlough, assistant engineer in the Institute of Transportation and Traffic Engineering, who calls it a "pushbutton traffic diary."

Cause and location of delaying factors on the highways—such as intersections, pedestrians, signals and parking of cars—are registered in code on the chart by pushing various buttons of the device.

Analysis of the chart presents a typical picture of factors involved in the traffic flow on a particular thoroughfare. The instrument is being tested in San Diego, Calif. It operates on current from a generator driven by the speedometer cable.

Science News Letter, January 24, 1953

Science News Letter, January 24, 1953

National Science Search.
for consideration for honors in the
test would have been in the running
as the equivalent of 15 on the entire
fields. Those who could do as well
Your talents probably lie in other
eight or less, that was not so good.
consider that pretty good. If you got
if you achieved 15 or higher, you can

Of the 19 possible correct answers,
105, 4.
The correct answer in Part C is:

Correct answers to Part B are: 53,
3; 54, 2; 80, 3; 81, 2.

Correct answers to Part A are: 1,
45, 1.

8, 3; 9, 1; 10, 3; 11, 3; 12, 4; 28, 1;
2; 2, 4; 3, 1; 4, 4; 5, 4; 6, 4; 7, 3;

Correct answers to Part A are: 1,
to check your answers.

Now that you have taken the
science aptitude test, you are ready

SCIENCE QUIZ ANSWERS

ANIMAL NUTRITION

Feed Ramie to Pigs

► PIGS ARE spoiled down in Central America. They are fattened on bananas. Sometimes they live in the house with the folks. They are led from place to place with loving care on leashes, much as we walk the family dog.

But in spite of this porcine attention, there are not enough pigs in this tropical area to supply sufficient low-priced animal protein in the diet of the population. One of the problems has been that there is not enough high-protein pasturage for large-scale production of pork.

Dr. Robert L. Squibb, U. S. animal nutrition specialist and one of many agricultural technicians from the United States who have attacked the problem, thought of using a fiber plant, ramie, as an experimental forage crop. To his amazement, pigs would eat nothing but ramie as long as it was

available, turning up their snouts at ripe bananas and tasty corn.

Ramie is a fast-growing, leafy perennial, now raised in Florida for its exceptionally strong and versatile fiber. Immature ramie has from 18% to 21% protein content, placing it among the high-protein animal feeds.

In the tropical areas of heavy rainfall, it has been observed to grow 20 inches in 20 days. Ramie can be grown almost anywhere in Central America, from the sweltering seacoast up to 5,000 feet in the cool highlands.

Pigs like protein-rich ramie so much that its use has created a new problem. Because they prefer ramie to corn, bananas and other fattening foods, it is hard to make them supplement their diet. Only by removing all ramie or mixing other feeds with it can they be made to vary their diet sufficiently.

This work of U. S. agricultural technicians in Central America was reported in *Foreign Agriculture* (Jan.).

Science News Letter, January 24, 1953

RADIO ASTRONOMY

Harvard University Moves Radio Telescope

See Front Cover

► THE 25-FOOT antenna of Harvard College Observatory was recently moved through the town of Harvard, Mass., on its way to the Observatory's Agassiz Station.

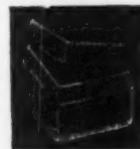
The antenna was built in one piece in order to obtain great sensitivity at minimum cost. It was moved to the installation site on a trailer, as shown on the cover of this week's *SCIENCE NEWS LETTER*, with attached winch to maneuver it under overpasses and other obstructions.

When in operation sometime this spring, the radio telescope will be used principally to study the 21 centimeter radiation from hydrogen clouds in our Milky Way galaxy, and may help to trace its spiral arms.

Science News Letter, January 24, 1953

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Science News Letter, January 24, 1953

METEOROLOGY

Coldest and Hottest

► DESPITE CONFLICTING Chamber of Commerce publicity, it is more likely to get colder in Florida than in most parts of California sometime during the next 100 years.

Arnold Court, graduate meteorologist at the University of California, has figured the highest and lowest temperatures likely to hit different parts of the United States during the next 100 years. According to a map he has drawn, lowest temperature in the Florida panhandle for the next 100 years will be about five degrees Fahrenheit. The expected minimum for Florida in the next 100 years is highest near Miami where it will get down to 21 degrees at least once.

However, minimums for San Francisco, Los Angeles and San Diego are all higher. Once in 100 years the temperature at the Golden Gate will hit bottom at 28 degrees, at Los Angeles, 23, and at San Diego, 27. San Francisco's 28 degrees will be the highest low temperature in the country in the next 100 years.

The lowest low temperature in the country in the next 100 years will be minus 64 degrees which Mr. Court expects to hit Montana, near the Canadian border, on at least one day.

Highest temperature likely to be recorded in the next 100 years will be in Death Valley, Calif., where we may expect at least one reading of 130 degrees. There is a big area in the middle of the Great Plains, stretching from the Texas-Oklahoma border up into Iowa and then northwest into Montana which can expect, at one point or more, readings of 115 degrees during the next century.

California's coast will have higher extreme temperatures than Florida. San Fran-

cisco will get at least one 108 reading, while Miami's thermometer will rise only as high as 99 degrees. Mr. Court figured this out on a statistical basis and presents his findings in the *Geographical Review* (Jan.).

Science News Letter, January 24, 1953

PHYSICS

Atom Spacing Measures Stresses in Minerals

► HARD-TO-DETECT strains in metals and minerals under stress may be spotted by measuring minute changes in spacing between their atoms.

This has been revealed in studies at the University of California at Los Angeles by Daniel Rosenthal, George Sines and Murray Kaufman. Changes in atomic spacing are measured by means of X-rays using the principle of diffraction.

In one phase of the study, it was found that prestressing doubled the ability of one aluminum alloy, used in the aircraft industry, to carry an external load.

The understanding of the behavior of metals and minerals under strain has been greatly clarified in another phase of the investigation. Marble previously deformed was ground up and changes of atomic spacing followed during the process of grinding.

Marble is especially suitable to the studies because its crystalline structure under confined hydrostatic pressure behaves in a manner similar to that of certain metals. Marble can be ground up for detailed laboratory studies without altering the crystalline structure, whereas metals cannot.

Science News Letter, January 24, 1953

• New Machines and Gadgets •

For addresses where you can get more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., Washington 6, D. C., and ask for Gadget Bulletin 658. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

❁ **ICE GRIPPER** worn in the "arch" of a boot helps construction workers, mailmen, loggers, farmers and sportsmen get good traction on ice. Made of 14-gauge rust-proofed steel, the "extra-heavy" lightweight gripper has four three-quarter-inch teeth and is held in place by a web strap that encircles the ankle.

Science News Letter, January 24, 1953

❁ **PHOTOGRAPHIC FIXER** for commercial photographers, photo finishers and other large-quantity users is based on ammonium thiosulfate and is said to have 12 times the fixing power of standard hypo. Films are fixed in two or three minutes, paper in one. When fixed in the solution, films and paper require 20% to 40% less washing.

Science News Letter, January 24, 1953

❁ **TAPE SOLDER** is a 40/60 tin-lead combination that has been developed to help the homeowner make minor repairs to small wires around the house. Manufactured as a ribbon three-eighths of an inch wide and 28 inches long, the "tape" is wrapped around cleaned wires and will melt in the flame of a match. It contains a rosin flux.

Science News Letter, January 24, 1953

❁ **TACKLE BELT** strapped around the fisherman's waist or chest, as shown in the photograph, holds nine watertight plastic



containers in which license, lures, hooks, sinkers, cigarettes and matches can be carried safely. Weighing less than 10 ounces, the belt is made of a translucent red or blue flexible plastic.

Science News Letter, January 24, 1953

❁ **FURNITURE POLISH** made of 100% pure beeswax helps preserve fine woods and leathers, including leather-topped furniture and handbags. British-made, the lavender-

scented polish requires little rubbing for a high gloss that resists water stains, scuff marks and fingerprints.

Science News Letter, January 24, 1953

❁ **CLOUD CHAMBER** enables science students and hobbyists to "see" radioactivity as alpha and beta particles from a harmless radium radiation source zip through alcohol vapor, leaving tell-tale tracks. Operating on standard electric current, the instrument uses dry ice and rubbing alcohol to produce the "cloud" in a glass chamber.

Science News Letter, January 24, 1953

❁ **COLD-WEATHER BOOT** developed for the armed forces now is available to civilians. Using wool and dead air spaces to insulate the foot from cold, the water-proof boots protect feet from frostbite, and feel warm even when only one medium-weight sock is worn. The boots' soles are cleated.

Science News Letter, January 24, 1953

❁ **POWER MEGAPHONE** for police, firemen and rescue teams works on six standard #2 flashlight batteries and can be heard up to one-fourth of a mile away. The compact all-in-one unit weighs only five and a half pounds and works on the same principle as a magnetic amplifier, requiring no vacuum tubes, wires or warm-up time.

Science News Letter, January 24, 1953

• Nature Ramblings •

► **PINK ELEPHANTS.** Heads of pink elephants, ranged up and down a stem, like the beasts on a totem pole. Millions of them, making pink meadows in the wet places on top of the mountains.

No. This isn't ultra-modern poetry. Neither is it a stenographic report of the proceedings of the Inebriate Ward. It is a sober, matter-of-fact description of what you may see on Swan Lake Flats near the north entrance to Yellowstone National Park any year during June and July.

Elsewhere in the Park, and in many other parts of the northern Rockies, pink elephants may be found in great abundance during the midsummer months.

The pink elephant, unlike the white elephant, is not an annoying animal, but a very pleasing plant. It is a relative of the unpleasingly-named but very common lousewort, and resembles that plant in the way its flowers are arranged, packed in a close

Pink Elephants



spiral spike. But each separate flower has its petals so arranged that even the most unimaginative adult can see at a glance that it is a pink elephant's head.

This remarkable shape is formed by the upper lip of the flower which is arched over in front and prolonged into a slender, cylindrical beak that is one-half to three-quarters

of an inch long. This beak bends downward until it touches the lower lip, whereupon it bends upward and outward, giving it the circus elephant appearance.

The relationship to the lousewort is so close that botanists now include it in the same genus, *Pedicularia*. But when it was first discovered, a good many years ago, it was thought to be a genus by itself, and received the appropriate name *Elephantella*. Thus proving that even professors have imagination.

The second, or specific, name has remained unchanged: *groenlandica*. For the pink elephant's real home is far to the north, in Greenland and Labrador, and its occurrence at these great heights represents its farthest southward travel. The remarkable plant is common in marshy places throughout northern America, especially in the sub-Arctic regions of Canada.

Science News Letter, January 24, 1953